Listing of the Claims

Claims 1–35 (Canceled)

Claim 36 (Original) A method of imaging and performing an interventional procedure on tissue, comprising the steps of:

inserting an endoscope through a lumen of a body of a living being;

inserting through a working channel of the endoscope a catheter having an ultrasound imaging device located at its distal end;

imaging a tissue structure located at a distal end of the endoscope with the ultrasound imaging device and displaying the tissue structure in a manner that indicates the depth of penetration of the tissue structure into the body of the living being; and

engaging, with an interventional device inserted through a working channel of the endoscope, the tissue structure imaged by the ultrasound imaging device in order to perform interventional therapy on the tissue structure, the interventional therapy being performed in a manner responsive to the displayed depth of penetration of the tissue structure.

Claim 37 (Original) The method of claim 36, wherein the interventional device is located at the distal end of an interventional catheter distinct form the catheter having the ultrasound device, there are at least two working channels of the endoscope, and the catheter having the ultrasound device is inserted through a first of the two working channels and the interventional catheter is inserted through a second of the two working channels.

Claim 38 (Original) The method of claim 36, wherein the step of performing the interventional therapy in a manner responsive to the displayed depth of penetration of the tissue structure comprises determining whether the depth of penetration of the tissue structure is sufficiently

limited such that the interventional therapy is justifiable and then, if the depth of penetration is sufficiently limited, performing the interventional therapy.

Claim 39 (Original) The method of claim 36, wherein the step of performing the interventional therapy in a manner responsive to the displayed depth of penetration of the tissue structure comprises removing an amount of tissue corresponding to the depth of penetration.

Claim 40 (Original) The method of claim 39, wherein the imaging step is performed simultaneously with the step of performing the interventional therapy.

Claim 41 (Original) The method of claim 36, wherein the interventional device comprises a scalpel.

Claim 42 (Original) The method of claim 36, wherein the interventional device comprises forceps jaws.

Claim 43 (Original) The method of claim 36, wherein the interventional device comprises a snare.

Claim 44 (Original) The method of claim 36, wherein the interventional device comprises a scissors.

Claim 45 (Original) The method of claim 36, wherein the interventional device comprises a needle.

Claim 46 (Original). The method of claim 45, wherein the step of engaging the tissue structure with the interventional device comprises injecting a chemical ablation fluid into the tissue through the needle.

Claim 47 (Original) The method of claim 45, wherein the step of engaging the tissue structure with the interventional device comprises cutting the tissue with the needle.

Claim 48 (Original) The method of claim 45, wherein the step of engaging the tissue structure with the interventional device comprises applying an adhesive material to the tissue using the needle.

Claim 49 (Original) The method of claim 36, further comprising the step of transmitting light to the tissue structure, conveying light back from the tissue for analysis by a spectroscopic diagnosis system, and determining, using the spectroscopic diagnosis system, whether an interventional procedure should be performed on the tissue.

Claim 50 (Original) The method of claim 36, wherein the lumen comprises an alimentary lumen.

Claim 51 (Original) The method of claim 36, wherein the lumen comprises a pulmonary lumen.

Claim 52 (Previously Presented) An assembly comprising:

an endoscope;

an elongated catheter shaft constructed to be inserted through a first working channel of the endoscope;

an ultrasound imaging device disposed at a distal end of the elongated catheter shaft; and

an interventional device constructed to be inserted through a second working channel of the endoscope and for engaging tissue imaged by the ultrasound imaging device.

Claim 53 (Previously Presented) The assembly of claim 52 further comprising:

a first optical fiber extending through the catheter shaft for transmitting light to tissue located at the distal end of the elongated catheter shaft; and

a second optical fiber extending through the catheter shaft for conveying light back from the tissue.

Claim 54 (Previously Presented) The assembly of claim 52, wherein the interventional device is selected from the group consisting of a scalpel, forceps jaws, a snare, scissors, and a needle.

Claim 55 (Previously Presented) The assembly of claim 52, wherein the interventional device is disposed at a distal end of a second elongated catheter shaft.